



## Memorandum

**TO:** Mayor Prussing, Council Members

**FROM:** Bill Gray, Public Works Director  
John Collins, Operations Manager

**DATE:** June 21, 2012

**RE:** 2011/2012 Winter Summary

This 2011/2012 winter season was a welcome one; however, it was completely out of the ordinary with the small amount of total snow fall and the above average temperatures recorded this winter. As an example, the average air temperatures for January 2011 was 23.0 degrees as compared to 31.5 degrees for January 2012. The Illinois State Water Survey recorded 11.4 inches of snow for this year's winter season. Comparing this winter season with the past Urbana had 18.7 inches in 2008/2009, 27.1 inches in 2009/2010 and 41 inches in 2010/2011. This year Urbana had 26 days that the Illinois State Water Survey recorded snow fall from at least a trace of precipitation to 4 inches. However, the Operations Division recorded 13 snow events that required more than one employee to address. This year the Operations Snow Fighters had to go to a full plowing operation once due to a 4 inch snow fall on January 12<sup>th</sup>. All other events were handled simply with salt spreading equipment.

The City's new Sidewalk Snow Removal Ordinance was enacted once on January 13<sup>th</sup> this past season with an overall good response and coverage from the affected business areas.

With the mild temperatures and the lack of snow, the total cost for this year's winter season was \$167,617.07. Listed below is a breakdown of expenses for this year's winter season.

Salt*	\$57,536.50
Salt Brine	\$3,861.00
Calcium Chloride	\$1,020.00
Ice Melt**	\$1,288.00
Employee Hours/Cost	\$31,285.75
Employee O/T Hours/Cost	\$26,389.97
Equipment Cost	\$42,362.85
Contractual Cost	\$3,873.00
<b>Total Cost</b>	<b>\$167,617.07</b>

Salt\* This cost includes salt used by the Mass Transit District the Urbana School District and the Urbana Champaign Sanitary District.  
Ice Melt\*\* This is treated salt for the Parking Deck and for use on the brick sidewalks at the City Building.

Miscellaneous notes from this past winter season.

Materials consumed;

850 tons of salt (78 tons went to MTD, USD, UCSD)  
15,444 gallons of salt brine  
1,500 gallons of calcium chloride  
3220 lbs. of Ice Melt\*\*

Employee and equipment hours;

1023 employee hours worked (128 hours on sidewalks)  
587 employee overtime hours worked (16 hours on sidewalks)  
1248 equipment hours (85 hours on sidewalks)

Materials carried over for next season;

1,040 tons of salt  
2,800 gallons of calcium chloride  
(We did not purchase calcium chloride for this past season)  
3,000 Lbs. of Ice Melt\*\*

Public Works was able to save fuel, time and salt using the E-Poke equipment and its capabilities to treat multiple traffic lanes in a single pass with the broad spectrum of application options available. The Operations Division was able to utilize one employee with the E-Poke to monitor the conditions before snow events while pretreating primary and secondary routes and treating selected troubled areas during light or trace amounts of snow fall resulting in minimal trips across the same pavement. With the vast contrast between the past two winter seasons, it is difficult to compare any cost savings with the use of salt brine and the new E-Poke equipment as compared to the 2010/2011 season.

The Operations Division has been working diligently to reduce the cost of the City's winter operations; however, it has proven difficult to recover from a \$20 dollar increase in the cost per ton of salt since 2008 even with the new equipment and the extensive use of salt brine.

Attached is a spread sheet of the past winters' material, equipment, contractual and labor costs for comparison.

For any question regarding this matter please feel free to contact this office.

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## 5 YEAR SNOW SEASON COMPARISON 2007-2012

	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012
Snowfall in Inches	26.3	18.7	27.1	41	11.4
Number of Snow/Ice Events	17	30	22	16	13
Plowing Events	4	5	5	7	1
Salting Events	13	25	17	9	12
Salt Usage in Tons	1,500	1,508	2,868	2,286	772/850*
Salt Usage Per Inch of Snow in Tons	57	81	106	56	68
Salt Cost per Inch of Snow	\$2,166	\$5,231	\$7,079	\$3,730	\$5,047
Total Salt Cost	\$56,962	\$97,822	\$191,841	\$152,911	\$57,537
Salt Brine In Gallons				25,515	15,444
Salt Brine Per Inch of Snow				622	1355
Salt Brine Cost per Inch of Snow				\$156	\$339
Total Salt Brine Cost				\$6,379	\$3,861
Calcium Chloride in Gallons	7530	6,315	3,864	5,850	1500
Calcium Chloride Usage Per Inch of Snow	286	338	143	143	132
Calcium Chloride Cost Per Inch of Snow	\$123	\$161	\$93	\$97	\$89
Total Calcium Chloride Cost	\$3,238	\$3,009	\$2,512	\$3,978	\$1,020
Ice Melt in Lbs.	6,500	7,000	3650	4,750	3220
Ice Melt Usage Lbs. Per Inch of Snow	247	374	135	116	282
Ice Melt Cost Per Inch of Snow	\$89	\$139	\$54	\$46	\$113
Total Ice Melt Cost	\$2,340	\$2,598	\$1,460	\$1,900	\$1,288
Employee Regular Labor Cost	\$128,236	\$91,482	\$81,031	\$123,733	\$31,286
Employee Overtime Cost	\$51,914	\$40,253	\$66,198	\$95,038	\$26,390
Employee Cost Per Inch of Snow	\$6,850	\$7,045	\$5,433	\$5,336	\$5,059
Total Employee Cost	\$180,150	\$131,735	\$147,229	\$218,771	\$57,676
Equipment Cost	\$90,440	\$77,380	\$133,482	\$158,864	\$42,363
Equipment Cost Per Inch of Snow	\$3,439	\$4,138	\$4,926	\$3,875	\$3,716

Contractual Cost	\$5,520	\$4,947	\$8,724	\$10,674	\$3,873
Total Cost for Winter Operations	\$338,650	\$317,491	\$485,248	\$551,577	\$167,618
Total Cost Per Inch of Snow	\$12,876	\$16,978	\$17,905	\$13,453	\$14,703

\* This includes salt used by the C-U Mass Transit District, Urbana School District and the Urbana Champaign Sanitary District  
Salt Brine was not used prior to the 2010/2011 Winter Season